بسمـــ الله الرحمن الرحيمـــ

فريق عمل كل الطب

يُقدمـــ

سلسلة كتب د/أحمد موافي

In Capsule Series

تم الرفع بواسطة فريق عمل كل الطب

ALLTEB MEDICAL TEAM

مجمع ومنقول من أكثر من مصدر

جزى الله خيرا كل من ساهم في هذا العمل

لا تنسونا من صالح دعائكمـــ،،

WWW.ALLTEBFAMILY.COM



In Capsule Series

Internal Medicine

RHEUMATOLOGY

Third edition

By:

Dr. Ahmad M.Mowafy



لاَ يُكَلِّفُ اللّهُ نَفْساً إِلاَّ وُسْعَهَا لَهَا مَا كَسَبَتْ وَعَلَيْهَا مَا اكْتَسَبَتْ رَبَّنَا لاَ تُؤَاخِذْنَا إِن نَّسِينَا أَوْ أَخْطَأْنَا رَبَّنَا وَلاَ تَحْمِلْ عَلَيْنَا إِصْراً كَمَا حَمَلْتَهُ عَلَى الَّذِينَ مِن قَبْلِنَا رَبَّنَا وَلاَ تُحَمِّلْنَا مَا لاَ طَاقَةَ لَنَا بِهِ وَاعْفُ عَنَّا وَاغْفِرْ لَنَا وَارْحَمْنَا أَنتَ مَوْلاَنَا فَانصُرْنَا عَلَى الْقَوْمِ الْكَافِرِينَ

صدق الله العظيم

سورة البقرة (آية٢٨٦)

Preface

- First and foremost, thanks are due to **ALLAH**, to whom I relate any success in achieving any work in my life.

- My words stand short of my supreme gratitude and thanks to Prof. Dr. **Hossam Mowafy** ; Head of critical care unit, Kasr El Ainy.

- My thanks are extended to all my medical students whom I produce this series:"**In Capsule Series**" to obtain a higher degree in internal medicine by a simple effort.

- Finally, I wish to thank all members of My Family, my colleagues , my Friends and even all my patients for their continuous help, encouragement and support.

Ahmad Mowafy

Index

- Rheumatology scheme ……1
- Rheumatoid arthritis…….……6
- Cout…….……16
- SLE……..……20
- Vasculitis……..……26
- Scleroderma……...……..29
- Polymyositis & Dermatomyositis……..……..31
- Osteoarthritis…….32
- Septic arthritis……..…….33
- Osteoporosis…….…….34
- Collections of rheumatology…….…...……..35
- Rheumatology MCQ…….…….…….…….39
- Rheumatology MCQ answers……..……44

Rheumatology Scheme

Definition: (*of any rheumatic disease*)

It's a connective tissue disorder characterized by articular & extraarticular manifestations, most probably autoimmune.

Etiology: (*of any rheumatic disease*)

- Still questionable.
- **But** , most probably autoimmune.
- Genetic factors may play a role(+ve family history & HLA association).
- Environmental factors play some role.

Clinical Picture : ***(of any rheumatic disease)***

- ♀ > ♂ **except** in Gout, Poly arteritis nodosa &Ankylosing spondyloitis .

- Rheumatoid Arthritis : ♀ : ♂ = 3:1
- SLE : ♀ : ♂ = 9:1 ☺

I. General manifestations:

- Fever.
- Fatigue.
- Sweating.

II- Articular manifestations: (3D)

- **D**istribution .
- **D**escription .
- **D**eformity .

Distribution:

1- **Number of the affected Joints** : mono or poly arthritis .

e.g. RA & SLE ⇨ poly , Acute gout ⇨ mono.

2- **Symmetrical or asymmetrical :**

All are asymmetrical except Rheumatoid Arthritis & SLE – both are symmetrical.

3- **Small Joints or large Joints** : RA & SLE → small Joints.

4- **Peripheral** (upper & lower limbs) **or central** (vertebral column & sacroiliac) :

RA & SLE : peripheral > central .

5- **Erosive or non erosive**:

- Non erosive: inflammation of synovial membrane only
- Erosive: erode & destroy the cartilage

Description:

1- Redness 2- Hotness 3- Tenderness

4- Swollen 5- Limitation of movement.

Deformity: If the lesion is erosive only . e.g. RA , chronic gout

e.g.: Rheumatoid arthritis → (*see later*)

III- Extra articular manifestations: 8

The same in any Rheumatologic disease ,Except as regard to **skin** & **Renal** manifestations .

1- Skin manifestations:

- RA : Palmer erythema, SC nodule.
- SLE : *(see later)*
- Scleroderma : Skin induraion .
- In all diseases : pallor, vasculitis , Raynaud's phenomenon .

2- Renal manifestations:

- RA : Amyloidosis .
- SLE: Glomerulonephritis .
- Scleroderma : Scleroderma renal crisis *(see later)*

3- Cardiac manifestations:

- pericarditis.
- Myocarditis.
- Endocarditis (?)
- Systemic Hypertension
- Ischemic heart diseases.

4- Chest manifestations:

- Pleurisy.
- Interstitial pulmonary fibrosis.
- Pulmonary infarction
- Pulmonary Hypertension.
- Caplan's syndrome in RA.
- ARDS in SLE .

5- CNS manifestations:

- Psychosis
- Chorea
- Dpression
- Epilepsy
- Neuropathy
- Myopathy
- Cerebral vasculitis → stroke .

6- Eye manifestations:

- Red eye due to conjunctivitis & iridocyclitis.

7- GIT manifestations:

- Nausea & Vomiting .
- Esophagitis.
- Abdominal pain due to vasculitis .
- Gastritis & peptic ulcer
- Pancreatitis .
- Hepatosplenomegaly .

8- Blood manifestations:

- ***Aneamia*** : ▫ Hemolytic : autoimmune hemolytic aneamia .
  ▫ Iron deficiency : due to chronic blood loss .

Investigations:

1- x-ray: 👍 Osteoporosis.

👍 In erosive diseases: ➢ Narrow joint space .

➢ Deformity. (mention)

👍 x-ray chest: Pleural effusion.

2- Aspiration of synovial fluid: Antibodies.

3- Blood picture:

- Anemia: ↓↓ RBCs : normocytic or microcytic .
- WBCs: ↑↑ except in SLE & Felty's syndrome.
- ESR: ↑↑
- CRP: ↑↑ except in SLE . (CRP may ↑↑ in SLE with infection)
- SGOT & SGPT : ↑ , this is more likely to be drug induced rather than a result of the disease process.

4- Serological tests:

➢ **Non specific Antibodies:** 👌

(may be +ve in all rheumatologic diseases , inflammation or even in normal population)

I- Rheumatoid Factor (RF):

- +ve in 80% of RA
- +ve in 20% of SLE

II- Lupus Erythematosis (LE):

- +ve in 80% of SLE.
- +ve in 20% of RA.

III- Antinuclear antibody (ANA):

- +ve in 95-100% of SLE
- +ve in 30% of RA.

➢ **Specific Antibodies :**

i- **Anti CCP** (*cyclic citrullinated peptide* , **NOT** contraceptive pills) ⇨ Rheumatoid arthritis. ☺

ii- **Anti double stranded DNA**: ⇨ SLE. (80%)

iii- **Anti-sm** (Anti-smith Ab, **NOT** anti smooth muscle Ab): ⇨ SLE.

iv- **Anti Ro Anti La** ⇨ SLE , Sjogren's syndrome . ♫ ♫

v- **Anti histone antibody** ⇨ drug induced SLE e.g. hydralazine.

vi- **SCL 70 antibody**: ⇨ **scl**eroderma.

vii- **Anti-RNP** (ribonucleoprotein): associated with mixed connective tissue disease.

Differential diagnosis :

✍ DD of monoarthropathy. *See later*

✍ DD of polyarthropathy. *See later*

Treatment :

○ **Cortisone .**

○ NSAIDs .

○ Immunosuppressive drugs : (methotrexate , cyclophosphamide)

○ Physiotherapy .

Rheumatoid Arthritis

Definition: It's a connective tissue disorder characterized by articular & extra articular manifestations, most probably autoimmune.

Etiology: - still questionable , but most probably autoimmune (Infiltration of synovial membrane with lymphocytes & plasma cells).

- Environmental & Genetic factors may play a role (+ve family history, HLA association: HLADr4).

Pathology:

I- Articular:

1. Synovitis: Thick, inflamed & infiltrated with lymphocytes & plasma cells.
2. Pannus formation: erode & destroy the articular cartilage.
3. Cartilage is eroded & destroyed → sublaxation & deformity.

II- Extra-articular:

SC. Rheumatoid nodules:(*Central fibrinoid degeneration with inflammatory cells covered by fibrous capsule)*

- In 20% of RA.
- Exclusive in sero+ve patient.

Mode of onset:

♦ Gradual onset (months) : 70 %

♦ Intermediate onset (weeks) : 20 %

♦ Acute onset (days) : 10 %

NB : Typical onset is gradual polyarthritis but may begin with monoarthritis .

Clinical Picture: - 1-3% of population - ♀ > ♂ (3:1) ☺

I. General:

- Fever
- Fatigue
- Sweating
- **Morning stiffness**

II- Articular manifestations: 3D 3×5

Distribution:

1- Polyarthropathy .

2- Symmetrical .

3- It affects mainly the peripheral Joints (UL, LL) > central joints .

4-Affects mainly small Joints e.g.: hands, feet (proximal interphalangeal, metacarpophalangeal & wrist Joints).

N.B: **The distal interphalangeal Joints** are usually spared.

5- The arthropathy is erosive ⇨ deformity.

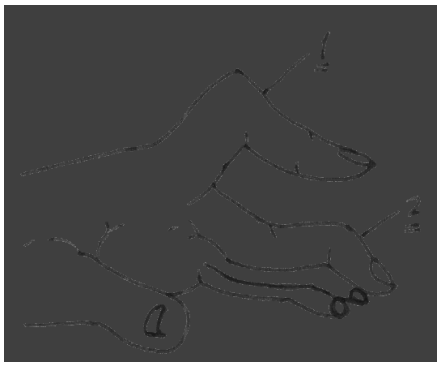
Description:

1- Redness 2- Hotness

3- Swollen 4- Tenderness

5- Limitation of movement.

Deformity:



1- Hand deformity:

i. *Boutonniere deformity*: extended distal & flexed proximal interphalangeal Joint.
ii. *Swan-neck*: flexed distal & extended proximal interphalangeal Joint.
iii. Ulnar deviation of metacarpophalangeal Joint.
iv. *Z-shaped thumb*:flexed metacarpophalangeal Joint & extended interphalangeal joint.
v. Carpal tunnel syndrome.

2- Cricoarytenoid: stridor & hoarseness of voice.

3- Atlanto-axial subluxation: Spinal cord compression ⇨ paraplegia.

4- Tendon rupture: (extensor more than flexor) e.g.: flexion of hip & knee.

5- Synovial membrane rupture : Baker cyst (popliteal cyst) .

III- Extra-articular manifestations:

i- Skin:

○ **S.C. rheumatoid nodules.**

○ **Palmer erythema.**

○ Vasculitis.

○ Paller.

ii- Renal:

○ **Amyloidosis.**

○ Glomerulonephritis: drug induced e.g.: NSAIDs, Gold & pencillamine.

iii- Chardiac:

○ Pericarditis (30%).

○ Myocarditis.

○ AR occurs due to vasculitis not due to endocarditis.

○ Systemic Hypertension.

○ Ischemic heart disease.

iv. Chest:

○ Pleurisy ○ Interstitial pulmonary Fibrosis.

○ Pulmonary Infarction. ○ Pulmonary Hypertension.

○ **Caplan's syndrome**: rheumatoid Nodules with pneumoconiosis. (very rare).

V. CNS:

○ **Carpal tunnel syndrome:** compression of the median nerve due to hypertrophied synovium, it may be the first symptom of R.A.

○ **Atlanto-axial subluxation** ⇨ spinal cord compression ⇨paraplegia.

○ Psychosis. ○ Depression.

○ Neuropathy. ○ Myopathy.

○ Chorea. ○ Epilepsy.

○ Cerebral vasculitis ⇨ stroke .

vi. Eye:

- ○ Conjunctivitis
- ○ **Scleritis** ⇨ repeated attack ⇨scleromalacia (blue sclera).
- ○ Iritis is not common.

vii- GIT:

- ○ Nausea & vomiting.
- ○ Abdominal Pain due to vasculitis.
- ○ Hepatosplenomegaly.
- ○ Pancreatitis.
- ○ Gastritis & peptic ulcer.

viii- Blood:

○ Anemia : ➢ Normocytic normochromic anemia. (Autoimmune hemolytic anemia).
➢ Microcytic hypochromic anemia (Iron deficiency anemia)

N.B: Causes of edema lower limb in patient with RA:

- Nephrotic syndrome (due to amyloidosis or drug induced GN).
- Pulmonary Hypertension or IPF ⇨ cor pulmonale
- Myocarditis ⇨ HF.

Rheumatic fever	Rheumatoid arthritis
- < 6 weeks	- Chronic disease > 6 weeks
- Large Joints	- Small Joints
- Not erosive	- erosive

Criteria for diagnosis of Rheumatoid arthritis:

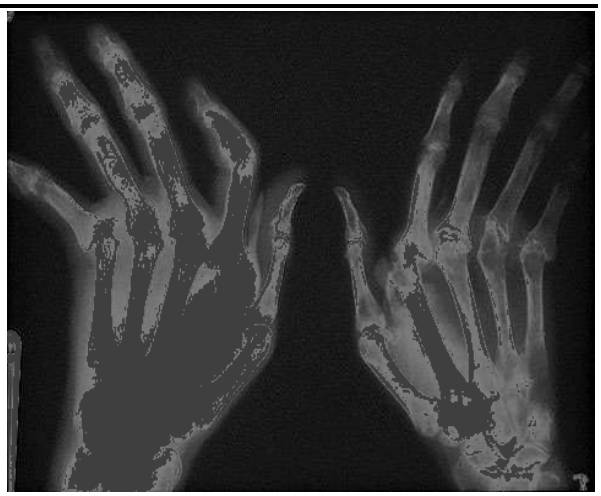
Patients can be said to have RA if they have <u>at least</u> **4** of the following **7** criteria:

1- Morning stiffness > 1h
2- Arthritis of 3 or more joints.
3- Arthritis of hand joints.
4- Symmetrical arthritis.
5- SC Rheumatoid nodules.
6- Characteristic x-ray finding.
7- +ve Rheumatoid factor.

<u>N.B</u>: Criteria 1, 2, 3 & 4 must be present for at least 6 weeks.

Investigations :

just scheme



1- X-ray : - Osteoprosis
- Narrow Joint space.
- Deformity (mention)
- X-ray chest: Pleural effusion.

2- Aspiration of synovial fluid: Antibodies.

3- Blood:

- ↓↓ RBCs: Anemia (normochromic – hypochromic)
- WBCs: ↑↑ may ↓↓ in felty's syndrome.
- ESR: ↑↑↑ may > 100 in severe cases.
- CRP: ↑↑

4- Serological tests:

- RF: +ve in about 80% of cases.
- LE: +ve in 20% of cases.
- ANA: +ve in 20% of cases.
- Recently : **Anti CCP** *(cyclic citrullinated peptide not contraceptive pills).* ☺

Rheumatoid Factor : It's an IgM against changed IgG.

- It may be +ve in :
  - ○ Normal population (4%) , 25% of the elderly.
  - ○ Rheumatic conditions: RA,Sjogran's syndrome,SLE,Scleroderma,Dermatomyositis...
  - ○ Non rheumatic conditions: Infective endocarditis , Myeloma , TB , HCV , Syphilis ....

Value of RF in RA:

- ○ Help in diagnosis (not sure alone).
- ○ Help in prognosis (follow up).

Variants of Rheumatoid arthritis:

1- **Sjogran syndrome**: (type 2) (sicca syndrome):

- Arthritis (like RA).
- Dry eye (xerophthalmia), dry mouth (xerostomia).
- Lymphadenopathy: there is increased incidence of lymphoma.
- Renal tubular acidosis & Raynaud's phenomenon.
- **+ve Rheumatoid Factor** in 90% of cases.

2- **Felty's syndrome:**

- Arthritis (Like RA).
- Hepatosplenomegally with hypersplenism , lymphadenopathy.
- **Pancytopenia.**
- **Cortisone** is a drug of choice.

3- **Seronegative arthropathies**: (sero -ve spondylopathy)

General features: *8 features*

- Rheumatoid factor: negative *(the reason for the name).*
- Central (spondylitis and / or sacroiliitis) > peripheral arthritis.
- Asymetrical peripheral arthritis.
- HLA-B27 (associated disorders).
- +ve family history.
- Red eye
- Erythema
- Enthesitis (inflammation at sites of tendon insertion).

Still disease: (systemic onset juvenile arthritis).

- A disease of under-fives but adult cases may occur.
- Fever, skin rash, splenomegaly.
- RF: -ve
- late arthropathy. ***So,*** misdiagnosed as haematological disorder.

Reiter's syndrome: Triad ♂ > ♀ (10 : 1)

- Arthritis.
- Conjunctivitis (red eye).
- Urethritis.

Behcet's syndrome:

- Arthritis (usually non-erosive, asymmetrical , lower limb).
- Iritis (red eye).
- Oral & genital ulceration.
- Occlusive vasculitis (IVC thrombosis).

Ankylosing spondyloitis:

- 0.1 % of population.
- ♂ : ♀ = 3:1 ☹ - 15-40 years.

C/P:

- **A**rthritis: - Spondylitis (100%) & sacroiliitis.
  - peripheral joints (30%).
- Iritis (25%).
- **A**chilles enthesitis (tendenitis).
- **A**ortic regurage (4%).
- **A**myloidosis.
- **A**pical pulmonary fibrosis.

Investigations:

- X ray:
  - Sacro-iliac joints: erosions, irregular joint margins.(*The earliest finding)*
  - Spine: erosions, calcification (Bamboo spine).
- Lab:
  - HLA-B27: in 95% of cases.*(not used for the diagnosis)*

  (although a -ve result makes ankylosing spondylitis unlikely, a +ve result is of little help)
  - ESR, CRP: ↑
  - RF: -ve
  - Alkaline phosphatase: ↑

Treatment: NSAIDs **,** physiotherapy , exercise .

Enteropathic arthritis: (colitic arthritis)

Arthritis with inflammatory bowel disease (ulcerative colitis & crohn's disease).

Psoriasis arthritis:

- Arthritis occurs in about 8% of patient with psoriasis.
- Patterns of psoriatic arthritis:
  - Distal intephalangeal joints involvement. (5-10%).
  - Sacroiliitis & spondylitis .
  - Asymmetric oligoarthritis (The most common).

Wipple syndrome: **more in** ♂

- **M** : **M**alabsorption syndrome.
- **A**: **A**rthritis
- **N**: **N**europathy & lymphadenopathy.

Treatment of RA:

(A) General treatment :

i- Rest: especially during acute stage.

ii- Splinting: ↓ pain , prevent deformity.

iii- physiotherapy: it can be started when the acute phase disappears.

(B) Medical treatment:

1- NSAIDs: for relieve of pain & inflammation *(symptom-modifying).*

- ***Aspirin*** *500 mg/ 4h*
- *Diclofenac 50mg t.d.s*
- *Paracetamol 500mg t.d.s*
- *Indomethacin 50 mg t.d.s*
- *Ketoprufen 100mg t.d.s*

Mechanism : ↓↓ PG through inhibition of cyclooxygenase enzyme.

S/E : Nephrotoxicity, hepatotoxicity, peptic ulcer.

2- Cortisone:

- Small dose of cortisone may be given (7.5 mg/d).
- May be used in high dose in treatment of extra-articular manifestations.
- SE of cortisone : see Endocrinology book page 62

NB **Analgesics & cortisone improve pain but don't prevent joint damage or slow the disease progression.**

3- Disease Modifying Anti-Rheumatic Drugs (DMARDs) :

- ↓↓ activity of the disease (↓ ESR , CRP) & ↓↓ progression.
- These drugs are slow acting drugs (their effect take 4-8 weeks to appear).

i- ***Gold salts :*** *(Na aurothiomalate)*

Dose : 50 mg/week IM for about 20 weeks (Total dose :1000mg)

SE: ○ **D**epression of bone marrow.

○ **H**ypersensitivity .

○ **P**roteinuria.

Precaution : ○ Stop if proteinuria > 2g /24h

○ Stop if WBCs < 3000 or platelets < 100000

ii- ***Penicillamine:*** ↓↓ RF

- Dose : 250 mg/d
- Response : within 4-6 months.
- SE : As Gold + SLE.

iii- ***Chloroquine :***

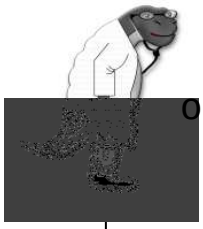
- Dose : 250 mg/d
- Response : Within 4-6 months.
- SE : **C**orneal opacity , GIT irritation , Skin rash.
- Precaution : Request fundus examination before use & every 6 months.

4- Immuno suppressive:

i- ***Methotrexate:***

- Dose: 7.5mg/ week.
- S/E: Hepatotoxicity – Nephrotoxic – Aplastic Anemia

ii- ***Avara:*** (Leflunomide) : 100mg/d for 3 days then 20mg/d.



Tumor necrosis factor α (TNF α) blockers

- These agents are used in severe active rheumatoid arthritis when standard disease - modifying therapy has failed. (*usually given in combination with methotrexate*)
- These drugs block the action of cytokines (*chemical mediators*).
- The onset of action is rapid compared with traditional disease - modifying drugs (*2 weeks*)
- e.g. : *Infliximab , Adalimumab.*

Interleukin - 1 blocker (*anakinra*)

- It blocks the biologic activity of IL-1 including inflammation & cartilage degradation associated with rheumatoid arthritis.

(C) Intra articular injection of cortisone:

Indication:

- Inflammation of tendon (e.g. tendon achillis).
- Used for joints that remain painful despite of general measures.

S/E: - Infection ⇨ septic arthritis

- Rebound pain.

(D) Surgical treatment:

- Synovectomy.
- Arthrodesis.
- Joint replacement.

Gout

Definition:

It's a clinical syndrome manifested by:

- **Hyperuricemia** > 7 in ♂ (N: 2.5 – 7 mg/dl)
  > 6 in ♀
- Deposition of uric acid in the tissues (***tophi***).
- Deposition of uric acid in the joint (***Gout arthritis***).
- Deposition of uric acid in the kidney (***Gouty Nephropathy***).

Purines → IMP(Inosine monophosphate) $\overset{\text{HGPRT}}{\rightleftharpoons}$ hypoxanthine $\overset{\text{XO}}{\rightarrow}$ xanthine $\overset{\text{XO}}{\rightarrow}$ uric acid

Etiology:

- ↑ Production of uric acid (Metabolic gout).
- ↓ Excretion of uric acid (Renel Gout).

(A): ↑ Production:

- 1ry:Enzymetic defect eg.:↓↓ HGPRT *(hypoxanthine –Guanine– phosphoribosyl – Transeferase).*
- 2ry : leukemia, lymphoma, sarcoidosis.

(B): ↓↓ Excretion:

- 1ry: Idiopathic (Isolated tubular defect).
- 2ry: 2A + 2D
  - **A**cute Renal Failure.
  - **A**cidosis
  - **D**ehydration → ↓ Renal Flow.
  - **D**rugs: e.g. Thiazide, Lasix.

N.B: Causes of hypourcemia :

- Pregnancy → GFR ↑↑ - Fanconi syndrome. - Iatrogenic : Allopurinol.

Pathology:

- Acute gouty arthritis:

Uric acid in itself is not irritant to joint but when urate crystals deposited in joints → phagocytosed by macrophage → release of lysosomal enzymes which produce inflammatory reaction → acute gouty arthritis.

- Chronic gout:

Deposition of uric acid in:

- **Joint**: chronic erosive arthropathy.
- **Kidney**: gouty nephropathy.
- **Tissue**: Tophi.

Clinical picture: ♂ > ♀ ☹ 40-50 y`

Asymptomatic hyperurecemia: > 90% of hyperuricemic patients never develop gout .

Symptomatic: 1- Acute gouty arthritis

2- Chronic gout.

1- Acute gouty arthritis: 3D

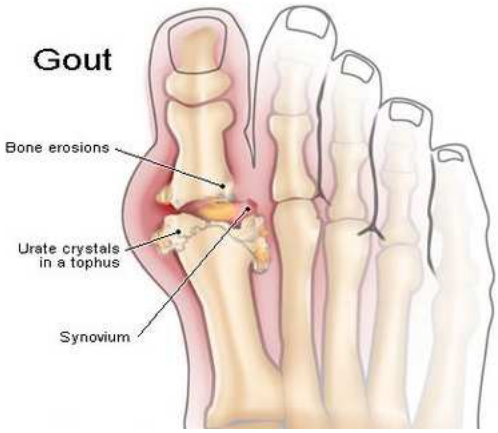
ppt factors: Trauma, infection, Alcohol.

Distribution:

- ○ Monoarthritis.
- ○ Usually in the first metatarsophalangeal joint (of the *big toe*).
- ○ **Not** erosive.

Description: hotness, Redness, tenderness, Swollen & limitation of movement especially to big toe

Deformity: No.



2- Chronic gout:

i- Arthritis: ○ Polyarthritis.

- ○ Asymetrical.
- ○ Erosive.
- ○ Remission & exacerbation.
- ○ Deformity: yes.

ii- Gouty nephropathy:

- ⏭ precipitation of uric acid into renal tubules → ARF or CRF.
- ⏭ Precipitation of uric acid in renal interstitium→chronic Interstitial nephropathy → CRF.
- ⏭ Precipitation of uric acid in urinary tract → urate stones (Hematuria, infection).

iii- Tophi:

- ○ Occurs with severe hyperuriceamia.
- ○ Ppt of Na urate under the skin especially around the joints & ear lobule.
- ○ May ulcerate & discharge chalky paste material.

Investigations:

1. Uric acid (N= 2.5 - 7mg%) : > 7 mg% in ♂
   : > 6 mg% in ♀
2. X ray: ○ punched out lesion ○ deformity in chronic gout.
3. Biopsy from tophi .
4. Aspiration of synovial fluid ⇨ urate crystals .
5. U/S kidney.

Treatment:

i- Asymptomtic hyperuricemia:

No treatment except with:

- ➲ +ve family history.
- ➲ Uric acid > 11mg%
- ➲ ↑↑ excretion of uric acid in urine.

ii- Acute gouty arthritis:

- *NSAIDs:*
  - Indomethacine: 75mg & then 50mg/6h
  - Diclofenac : 75 mg & then 50mg/6h
- *Cholchicine* : 1-2 mg then 0.5mg/6h (maximum dose **6** mg)
  S/E: diarrhea, vomiting
- *Short term cortisone.*

III- Chronic gout: (*hypouricemic drugs*).

Indication:

- recurrent acute gout.
- Tophi
- Joint deformity
- Nephropathy.

- ***Allo****purinal* (zyloric):
  Dose: 100-300mg/d
  Mech. : ↓↓ xanthine oxidase enzyme.
  S/E : fever, diarrhea, Allergy , BM depression .

- *Uricosuric drus (probencid)* :

  Dose : 0.5-1gm/12h.

  Used with alkalinization of urine .

N.B: It's important to drink plenty of fluids with anti gout drugs.

Diet in Gout:

- There is no need for severe dietary restriction.
- Avoid excessive meat intake, & alcohol.
- Excessive fluid intake.
- Vegetable protein → ↓ risk of gout.
-

Pseudogout (chondrocalcinosis)

Definition: Deposition of Ca pyrophosphate crystals in cartilage.

Etiology: ○ Idiopathic

○ It can occur with certain metabolic diseases: hypercalcaemia, DM, CRF, hemochromatosis.

Clinical picture: ♂ = ♀

○ **Mono** arthritis especially in the **knee.**

Investigations:

1) X ray: cartilage calcification.

2) Ca-pyrophosphate crystals in synovial fluid.

3) ESR ↑

Treatment: NSAID - Intra-articular cortisone

Pseudo-Pseudo Gout:

- Hydroxy appatite arthropathy.
- ♀ > ♂ - shoulder joint is the commonest site.

Systemic Lupus Erythematosis (SLE)

Definition: It's a systemic connective tissue disorder characterized by extra-articular & articular manifestations, most probably autoimmune.

Etiology: is still questionable, but most probably autoimmune: defect in T suppressor lymphocyte → ↑↑ autoantibody → immune complexes which can involve tissue anywhere in the body → systemic manifestations.

- Genetic & environmental factors (sun light, infections) may play some role.
- Drugs (*drug induced lupus*): **hydralazine**, INH, penicillamine & phenytoin.
- Hormonal factor also may play an important role: e.g: estrogen, this explains why SLE is common in ♀ especially in child bearing period & exacerbation in pregnancy.

Pathology:

I- Articular:

Synovitis which is usually not erosive (no cartilage destruction).

II- Extra articular:

Deposition of immune complex in a variety of areas of the body: skin, kidney (glomeruli), heart, lung, CNS….

N.B: - *when only skin is involved, this condition is called discoid lupus.*
- *When internal organs are involved, this condition is called SLE.*

Clinical picture:

More common in ♀ (20-45y`)
♀: ♂ (10:1) ☺

I- General: fever, fatigue, sweating.

II- Extra articular manifestations:

i- **Skin**:

- Malar rash: erythema over the cheeks.
- Butterfly rash: erythema on the cheeks & nose.
- Discoid rash: erythema then adherent scaling then scar formation, occur over the face & neck.

- Photosensitivity: Skin rash as a result of unusual reaction to sunlight.
- Alopecia
- Vasculitis: - purpura, leg ulcer
  - Raynaud's phenomenon: poor circulation to the fingers & toes with cold exposure.

ii- Renal: (Lupus nephritis)

- ***Gromerulonephritis***.....*6 types*

Type 1: minimal change GN
Type II: Mesangial widening
Type III: Focal proliferative GN
Type IV: Diffuse proliferative GN
Type V: membranous GN
Type VI: Sclerosing GN

iii- Cardiac:

- Pericarditis
- Myocarditis → HF
- **Libman endocarditis** (non-infective endocarditis) → Aortic & mitral regurge.
- Systemic Hypertension.
- Ischemic heart disease (accelerated athrosclerosis).

iv- Chest:

- Pleurisy & pleural effusion.
- Interstitial pulmonary fibrosis.
- Pulmonary infarction (shrinking lung syndrome)
- Pulmonary hypertension.
- **ARDS**

V- CNS:

- Psychosis
- depression
- Neuropathy
- Myopathy
- Chorea
- Epilepsy
- Cerebral vasculitis (lupus cerebritis) → stroke.

vi- Eye:

- Uveitis
- Conjunctivitis
- Iridocyclitis
- Retinal vasculitis

vii- GIT:

- Nausea & vomiting.
- Painless mouth ulcer.
- Esophagitis
- Gastritis & peptic ulcer.
- Vasculitis: Abdominal Pain.
- Pancreatitis
- HSM

Viii- Blood:

Pancytopenia: ↓ RBCs: heamolytic anemia.
↓WBCs: recurrent infection.
↓platelets (Thrombocytopenia) → Bleeding.

III- Articular manifestations: 3D

i- Distribution:

1- Polyarthropathy.
2- Symmetrical.
3- Affects mainly the peripheral joints e.g.: UL, LL
4- Affects mainly small Joints e.g.: Hands, feet.
5- Usually Not erosive: (No deformity).

ii- Description: ♫♫

- ***Arthralagia*** more than arthritis (pain only).
- ***Myalagia*** is common.

iii- Deformity:

- v. rare, may occure due to tendon or ligament laxity.
- necrosis of hip due to steroid therapy.

Pregnancy & SLE:

1- Fertility is unaffected. (normal & safe pregnancy & she is often able to deliver normal infants).
2- Disease exacerbations during pregnancy may occur.
3- Preeclampsia & abortion occur more frequently in pregnant patient with lupus.
4- Child born to mother with SLE: skin manifestations & congenital heart diseases.

Cause of death in patients with SLE:

- Nephritis
- Infection
- Stroke
- MI
- SLE → ↑ risk for developing cancer (blood, breast).
- Coronary diseases.

N.B: Ten years survival > 90%

Investigations:

(1) Blood picture:

- ○ Anemia : heamolytic anemia.
- ○ Leucopenia
- ○ Thrombocytopenia
- ○ Lymphopenia
- ○ ESR : ↑↑
- ○ CRP: <u>normal</u> but ↑ only with infection.

(2) Serological tests:

➢ **non specific Ab:**

- ○ LE cells: +ve in 80% of cases.
- ○ Rheumatoid factor (RF): +ve in 20%
- ○ Anti-nuclear Ab (ANA): +ve in 95-100%

<u>Causes of +ve ANA:</u> *(+ve in 5% of normal population)*

- o SLE (95%) ○ Rh. Arthritis (30%). ○ Scleroderma (80%).
- o SJogran's syndrome (60%). ○ 1ry biliary cirrhosis.
- o Infective endocarditis. ○ Old age.

➢ **Specific Ab:**

- Anti DNA Ab: in high titer is very specific to SLE.
- Anti smith (Anti-sm): indicates poor prognosis.
- Anti Ro, Anti La: found in ANA –ve lupus.
- **Anti Histone: specific to drug induced lupus.**
- - ↓ C_3 & C_4: Consumed.

(3)- X ray : Osteoprosis

Chest X-ray: pleural effusion.

(4)- Aspiration of synovial fluid: Ab

(5)- Investigations for lupus nephritis: urine analysis & renal function test.

***The eleven criteria used for diagnosing SLE**: (American Rheumatism Association).*

{ **2-** *Rash &* **2-** *Serology &* **7-***Ps*}

1. Malar **rash**
2. Discoid **rash**
3. **P**hotosensitivity
4. **P**ainless oral ulcers
5. **P**ancytopenia
6. **P**roteinuria or cast
7. **P**leurisy or pericarditis
8. **P**sychosis or seizers
9. **P**eripheral joints arthritis (2 or more)
10. +ve ANA antibody.
11. Immunological investigations: +ve anti DNA ab or anti-sm ab.

The diagnosis of SLE is strongly suggested, when a person has 4 or more of these criteria.

Treatment of SLE: 7

- There is no cure for SLE.
- Goal of treatment is to relieve symptoms by decreasing inflammation, ↓↓ autoimmune activity.
- Depends on severity and organ involvement.

1- General prophylactic measures:

a. Rest.
b. Sensitivity to light is treated by → protective clothing, sunglasses & sunscreens.
c. Avoid drug inducing SLE.
d. Psychological treatment.

2- NSAIDs: are used to treat arthritis & pleurisy.

3- Cortisone: for extra-articular manifestations.

- Topical: cortisone cream for skin rash.
- Systemic:

***Pulse dose**: 1000mg/d IV for 3 days.*

Then, followed by 60mg/d till activity of the disease disappears (↓↓ symptoms & signs , -ve Anti DNA).

Then followed by **maintenance dose**: 10:15mg/d

SE of cortisone : see Endocrinology book page 59

4- Hydroxychlorquine : Is sometimes used with cortisone (low dose) for skin manifestations & arthritis resistant to NSAIDs.

5- Immunosuppressive drugs:for severe cases resistant to cortisone therapy

(MAC): ○ **M**ethotrexate.

○ **A**zathioprine.

○ **C**yclophosphamide.

6- Plasmaphersis: in SLE patients with serious brain or kidney manifestations.

7- Treatment of complications:

e.g: Removal of spleen is sometimes done for thrombocytopenia.

End stage kidney damage: dialysis or kidney transplant.

Variants of lupus:

(1) Drug induced lupus:

- More common in ♂
- History of drug intake: hydralazine INH, phenytion.
- **No** renal or CNS manifestations.
- Pathogenesis: Unknown.
- Investigations: Antihistone antibody.
- ttt: withdrawal of the drug & short course steroid are all that we need.

(2) Antiphospholipid antibody syndrome:

- Recurrent attacks of venous or arterial thrombosis and thrombocytopenia in association with laboratory finding of antibodies against phospholipids.

C/P: ○ Focal neurological manifestations: hemorrhage , thrombosis.
○ Endocarditis
○ Renal manifestations
○ ARDS.

Treatment

- Heparin or warfarin with INR= 3 to 4.5
- I.V steroids
- Cyclophosphamide
- Plasmapheresis

Vasculitis

Definition: inflammation of blood vessels of unknown etiology.

Etiology: **as scheme**

Classification: (**according to the size of vessel involved**)

Small vessels:

- Henoch-Shonlein purpura.
- Wegener's granulomatosis
- Vasculitis of RA,SLE

Medium sized vessels:

- Polyarthritis nodosa
- Kawazaki disease
- Churg strauss syndrome

Large vessels:

- Takayasue's disease
- Giant cell arthritis (temporal arteritis)
- Aortitis associated with ankylosing spondylitis

clinical picture:

General: -Fever -Fatigue -Sweating -Loss of weight

Articular manifestations: arthritis, arthalgia

Extra articular manifestation: the same as general scheme

But, each type of vasculitis can also cause **specific** manifestations depending on which vessel &which organ is affected such as:

Henoch-Schonlein Purpura

Most common vasculitis in children
Most commonly affects: ➲skin: palpable purpura

➲Joints: arthritis (large joints, not erosive)

➲GIT. : Abdominal pain, bleeding

wegener's granulomatosis

- Upper respiratory tract : sinusitis , saddle nose
- Lung : pulmonary nodule
- Kidney : glomerulonphritis
- cANCA: +ve in 90% of cases MCQ

churg-strauss syndrome

- Bronchial asthma
- Eosinophilia

Kawasaki disease

- Usually in children
- **Red** eye -**Red** lips& mouth -**Red** hands & feet **-Red**skin (rash)
- Cervical lymphadenopathy
- Vasculitis of coronary arteries : coronary aneurysm , myocardial infarction may occur
- Treatment: **Cortisone Is Contraindicated** (coronary aneurysm)
  Aspirin & immunoglobulin are used

Takayasu's disease *pulsless disease*

- Affects the aorta & its main branches e.g subclavian artery producing :
  - Arm claudication
  - Absent pulse

Giant cell (temporal) arthritis

- Vasculitis of large vessels especially the cranial vessels
  - Localized headache
  - Visual disturbance
  - Jaw claudications.
  - high dose oral prednisolone should be commenced immediately to try and prevent visual loss from ischemic optic neuropathy.

Polymylagia rheumatic

- It's not a vasculitis but it's a syndrome of pain & stiffness localized to the shoulder & hips often occurs in association with giant cell arteritis

Polyarterites nodosa

Definition: systemic necrotizing vasculitis with aneurysms formation , affecting bothmedium and small arteries.

If only small vessels are affected, it is called microscopic polyangitis

Etiology: Autoimmune, Hepatitis B play a big role (HBsAg +ve in 30% of cases)

Clinical picture:

As scheme But:

- Renal (60%) : ➢infarction rather than glomerulonephritis
  ➢Hypertension ^ renal failure
- Neurology : ➢stroke
  ➢ Mononeuropathy, mononeuritismultiplex
- **No p**ulmonary involvementin classic PNA
- Genitourinary : orchitis
- Hepatitis B is associated in 30% of cases

Investigations:

- Biopsy
- Angiography : shows multiple aneurysms
- ESR, mild eosinophelia
- HBsAg is +ve in 30% of cases
- ANCA is +ve in < 10%

Treatment: cortisone & immunosuppressive

Progressive systemic sclerosis "scleroderma"

Definition: It's a connective tissue disorder characterized by thickening & fibrosis of the **skin** with involvement of blood vessels & internal organs.

In fact, scleroderma literally means hard skin.

Pathology: ✍Collagen deposition all over the body.
✍Vasculitis.

Clinical picture: ♀ : ♂ **3 : 1** ☺

Skin:

- Early: edema.
- Later : induration (hardening) of the skin with loss of its elasticity.
- Skin hyper/hypo-pigmentation , ulceration & calcification.
- **Raynaud's phenomenon:** initial complaint in 70% , all patients eventually develop it during the course of their disease.

GIT:

- Esophagus: **Dysphagia** , reflux. (80% of cases)
- Small intestine : malabsorption syndrome.
- Large intestine: constipation.

Renal:

- Vasculitis of renal blood vessels : hyper tension &CRF.
- **Scleroderma renal crisis** : it's a life-threatening condition manifested by sudden onset of malignant hypertension & ARF.

Cardiac:

- Cardiomyopathy
- Pericarditis & pericardial effusion.
- Ischemic hart disease
- Heart block: fibrosis of the conducting pathways

Chest:

- Interstitial pulmonary fibrosis.
- Pulmonary hypertension
- Aspiration pneumonia : due to esophageal reflux.

CNS: headache and stroke during hypertensive renal crisis.

Musculoskeletal:

- Arthralgia & rarely arthritis.
- Myopathy.

Variants (types) of scleroderma:

1-Diffuse scleroderma:

- Diffuse skin hardening involving trunk & proximal limbs as well as face & distal limbs.
- Severe internal organs damage and is generally more life threatening.

2-Limited scleroderma: CREST Syndrome

⏭ Skin harding is limited to the **F**ingers, **F**ace, **F**eet.

⏭ Internal organ involvement is not severe, much better prognosis

⏭ CREST(**C**alcinosis **R**aynaud's, **E**sophageal dysmotility, **S**clerodactyly, **T**elangiectasia)

3-Localized scleroderma: (scleroderma without internal organ involvement)

⏭ Morphoea: local patches of scleroderma

4-Systemic sclerosis sin(without) scleroderma

⏭ Internal organ involvement without skin manifestations rare

5-Overlap syndrome: scleroderma associated with other autoimmune disease

Overlap syndrome (*mixed connective tissue disease): this syndrome involves mixed features of at least 2 connective tissue disorders (SLE,Scleroderma,Polymyositits*)

Investigations:

1. ↑ ESR & CRP.
2. ANA: +Ve in 90% of patients.
3. RF: +ve in 20% of patients.
4. **Anti scl-70**: 30% of diffuse scleroderma.
5. **Anti – centromere:** 70% of limited scleroderma.
6. Biopsy

Because not all people with scleroderma have these antibodies and because not all people with the antibodies have scleroderma, lab test results alone cannot confirm the diagnosis.

Treatment: "relieving symptoms and limiting damage"

❶ **Penicillamine:** slow progression of skin disease (↓ collagen production)

❷ **Steroids:** indicated for ttt of inflammatory myositis, pericarditis Or pulmonary fibrosis.

Steroids don't help the skin.

❸ **Symptomatic ttt.:**

- Arthritis: NSAIDs
- Raynaud's: CCB.
- Renal crisis : ACE inhibitor is the drug of choice " life saving"

Polymyositis & Dermatomyositis

Polymyositis is an autoimmune inflammation of skeletal muscle. When associated with cautaneous lesion it is called dermatomyositis.

Clinical picture: (MOHEM)

(M) **M**yositis: mainly proximal muscles

(O) **O**edema

(H) **H**eliotrope discoloration

(E) **E**rythematous macules

(M) **M**alignancy: this occurs particularly in males with age above 50 years

Investigations:

1. Elevated muscle enzymes : CK, SGOT, LDH
2. Abnormal EMG
3. Muscle biopsy
4. Myositis specific antibody : Anti-jo-1 (30%)

Treatment

- steroid
- Immunosuppressive

Addiction-Free Nation Program should consider **in capsule series** its **1st** priority, as it has been proved that almost all internal medicine seekers are addicted to it.

Dr.Alsayed Dawoud
Kasr-Alainy School of Medicine

Osteoarthritis

Definition: it's a degenerative arthritis, characterized by breakdown of the cartilage with osteophytes formation, results from ***wear*** & ***tear*** on the joints.
AO unlike RA, is not inflammatory disease

Classification:

1. **Primary**: unknown etiology , genetic factor play a role
2. **Secondary**: to
   - ➲ Mechanical: occupational , sports injuries
   - ➲ Joint disease : RA, Septic arthritis, Gout.
   - ➲ Endocrinal : hyperparathyroidism, DM, acromegaly

Risk factors

- **Aging** (> 45 y.) : over time a joint moves, cartilage deteriorates & smooth surface becomes rough
- +ve family history
- Sex: more common in ♀ ☺
- Obesity: loading stress on weight bearing joints e.g. knee
- Overuse of joints

Clinical picture: OA is the most common joint disease sparing no age or race

1. **Pain** (↑ by exercise & ↓ by rest) , stiffness may occur
2. Crepitus on movement
3. Minimal deformity & wasting of muscles around the joint
4. **No systemic manifestations**

Morning stiffness is not usually a prominent feature on OA, & when present, lasting No more than quarter of an hour.

Common joints involved are:

- Knee
- Hips
- Spinal (cervical , lumbar)
- Distal interphalangeal joints (DIP): Heberden's nodes
- Proximal interphalangeal jonts (PIP) : Bouchard's nodes
- 1st carpometacarpal joint (base of the thumb) & 1st metatarsophalangeal joint.

N.B: metacarpophalangeal joints are not involved in primary OA.

Investigations:

- **Normal laboratory findings**. (AF, ANA –ve, ESR, CRP normal)
- **x-ray:** (70% of 70 years olds)
  - ➢ joint space narrowing
  - ➢ osteophytes
  - ➢ subchondrial sclerosis

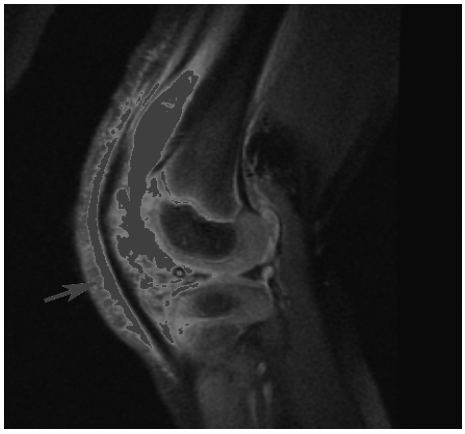


treatment:

- exercise
- physiotherapy
- analgesics (NSAIDs) short course
- intra-articular injection of steroids
- surgery

Septic arthritis

Definition: septic arthritis is an infection inside a joint that is caused by bacteria.
It may lead to severe joint destruction within short time.



Common organisms:

- Staph aureus.
- N.gonorrhoeae .
- Streptococci
- Gram –ve bacilli

Risk factors:

- Advanced age.
- Drug abuse
- DM & suppressed immune system.
- Rheumatoid arthritis.
- Artificial joints, recent joints surgery or intra-articular injection of cortisone.

Clinical picture:

- Flu-like symptoms: **F**ever, **H**eadache, **M**alaise, **A**norexia.
- Acute joint pain: usually single especially the knee (80% of cases monoarthritis)
- Signs of inflammations: Redness, Hotness, Tenderness, Swelling, Limitation of movements

Investigations:

1. **Blood**: leukocytosis, ↑ ESR, blood culture.
2. **x-ray**: articular erosion may occur
3. **synovial fluid examination**: +ve culture, ↑ neutrophils

The synovial fluid should be examined for crystals,because of gout & pseudogout can resemble septic arthritis

treatment:

- **antibiotics (IV):** according culture & sensitivity test. E.g: OX,CLOX, DICLOX-acillin or Vancomycin for staph for about 4 weeks.
- Analgesics.
- Drainage of the infected joint daily

Viral arthritis

- Common viruses associated with arthropathy include parovirus, robelle,HIV &hepatitis **B** and **C**
- Clinical picture: flu-like symptoms, skin rash & acute polyarthropathy.
- Viral arthritis are usually self limiting.

Osteoporosis

Definition:

It is the most common metabolic bone disorder, characterized by ↓ in the density of the bone leading to enhanced bone fragility and an increase in fracture risk. Bone is normally mineralized but is deficient in quantity.

Pathogenesis:

- The rate of bone formation is normal but, the rate of bone ***resorption is increased***
- ↑ Loss of trabecular bone than impact bone

Etiology:

❶ ↓ ***hormones:*** Estrogen or Androgen deficiency

❷ ↑ ***hormones:*** Cushing $, Hyperparathyroidism, Thyrotoxicosis

❸ ***Genetic factors:*** **the most single significant factor**

❹ ***Prolonged immobilization***

❺ ***Others:*** AR, DM, liver diseases, Malabsorption.

Clinical picture: ♀ > ♂ ☺

➲ Asymptomatic MCQ

➲ May present with backache or spontaneous fracture.

Investigations:

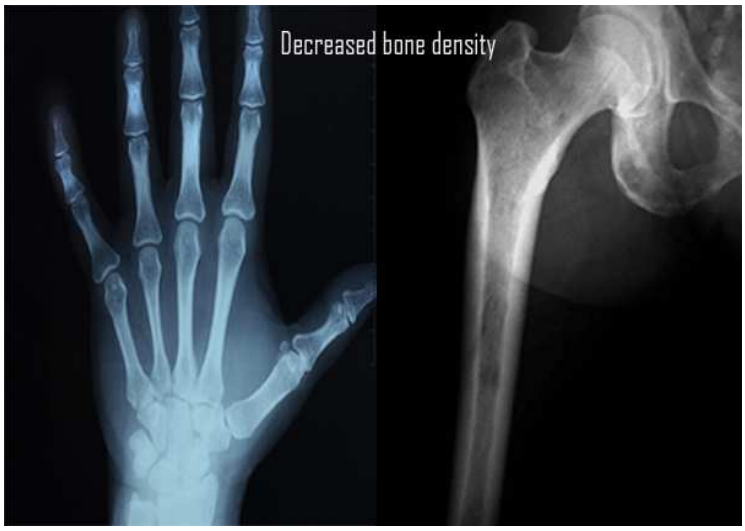
Lab.: ♦ Serum Ca, po4, PTH, ➳ **NORMAL**

♦ Alkaline phosphatase ➳ may ↑ with fracture

Imaging: Plain x-ray & densitometry & CT

Treatment:

- Bisphosphonates
- Vit,D & Ca
- Calcitonin
- **S**elective **E**strogen **R**eceptor **M**odulators (SERMs)



Collection of Rheumatology

DD of neck pain	DD of back pain
I- Mechanical • Cervical spondylosis • Disc prolapse • Muscle spam	**I- Mechanical** • Trauma. • Lumbar spondylosis. • Disc prolapse • Muscle spasm.
II- Inflammatory: • Sero-ve arthropathy • Rheumatoid arthritis	**II- Inflammatory:** • sero –ve arthropathy. • Brucellosis
III- Metabolic: • Osteoporsis • Osteomalacia	**III- Metabolic:** • Osteoporsis • Osteomalacia
IV- Neoplasm: • Metostesis • M.Myeloma • Lymphoma	**IV- Neoplasm:** • Metostesis • M.Myeloma • Lymphoma
V- Referred Pain: - Angina - Pancost tumor - Aortic aneurysm	**V- Referred Pain:** - Pancreatitis - Cancer pancreas - MI – Renal colic - Prostate or cervix disease.

DD of non infilammatory arthritis:

- Trauma.
- Osteoarthritis.
- Hemoartherosis (hemophilia).
- Charcot tear.

DD of inflammatory arthritis:

- Septic arthritis.
- Rheumatoid arthritis.
- SLE
- Sero –ve arthropathy
- Gout
- Pseudo gout.

N.B: How can you differentiate between inflammatory & non inflammatory arthropathy?

Inflammatory:

- ↑↑ pain at rest (at night).
- morning stiffness.
- improvement with activity (↓↓ by movement).
- ESR, CRP: ↑↑

Non-inflammatory:

- ↑↑ with movement.
- ↓↓ with rest.
- normal laboratory finding.

D D of monoarthritis:

- Rheumatic fever.
- Gout
- Pseudogout.
- Trauma
- Hemoarthrosis
- Septic arthritis
- T.B
- Atypical rheumatoid arthritis

DD of recurrent arthritis:

- Rheumatic fever
- Gout
- Pseudogout
- Rhematoid arthritis.
- Sero-ve arthropathy.

DD of systemic arthritis:

- Rheumatic fever
- SLE.
- Hepatitis B

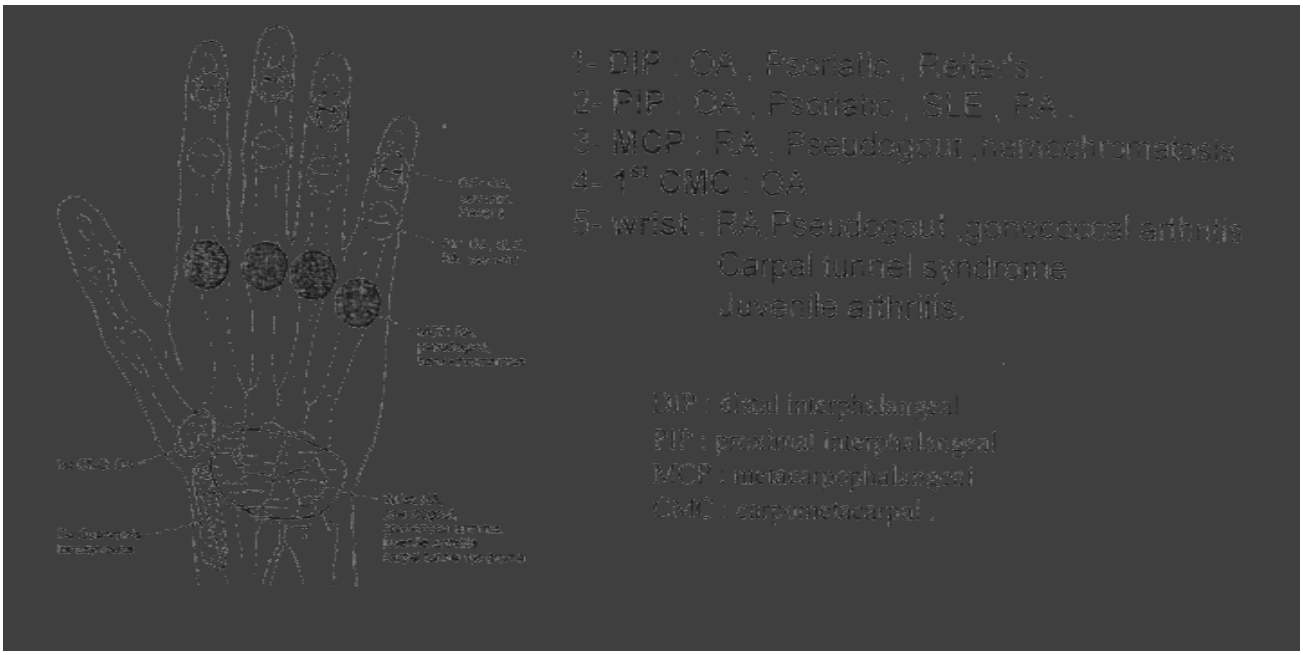
What are 3 principal crystals associated with joint inflammation?

- ***Urate:*** gout
- ***Calcium pyrophosphate:*** pseudogout.
- ***Hydroxyapatite***: pseudo- pseudogout.

Drug induced rheumatic diseases:

- ***Arthalgia:*** qunidine, quinolones, cimitedine, interferone, amphoticine B
- ***Myalagia/myopathy:*** glucocorticoids, penicillamine, choroquine, statins, quinolones,interferone, alcohol.
- ***Gout:*** diuretics, INH, penicillamine, phenytoin.
- ***SLE:*** hydralazine, INH,penicillamine, phenytoin.
- ***Scleroderma:*** carbidopa, tryptophan.
- ***Vasculitis:*** allopurinol, amphetamine, thiazide, penicillamine.

Arthritis of the small joints of the hand



Causes of purpura in a patient with connective tissue disease:

- Vasculitis
- Cortisone therapy
- Thrombocytopenia due to NSAIDs
- Amyloidosis
- Factor iiiv antibodies (SLE, RA)

What are the physical findings in carpal tunnel syndrome:

- Wasting of the thenar eminence.
- Weakness of the thumb
- Sensory loss of the first 3 fingers & half of the ring finger
- Numbness & pain reproduced by flexion of the wrist for one minute.
- Features of the cause; acromegaly, myxoedema, rheumatoid arthritis.

DD of arthritis associated with subcutaneous nodules:

- Rheumatic fever
- Rheumatoid arthritis
- Gout
- Still's disease.

DD of polyarthopathy

- RA
- Rheumatic fever.
- SLE
- OA
- **P**AN
- **P**olyarticular gout (chronic gout)
- **P**ara-neoplastic syndromes
- Septicaemic arthritis.
- Seronegative arthritis.

DD of arthropathy

Acute	Chronic
Infection: **Bacterial:** • N.gonorrheae • Staph. Aureus • Streptococci • Gram –ve bacilli; Brucella **Viral:** ➳ Rubella ➳ Hepatitis C, B	**Infection:** • T.B • Syphilis • Chronic septic arthritis
Immune: • Rheumatic fever. • Rheumatoid arthritis • Vasculitis.	**Immune:** • All collagen diseases
Metabolic: • Acute gouty arthritis • Pseudogout	**Metabolic:** • Chronic gouty arthritis. • Pseudogout. • Amyloidosis. • Haemochromatosis.
Degenerative: …….	**Degenerative:** • Osteoarthritis.
Endocrinal: ……	**Endocrinal:** • Acromegaly • Myxedema
Miscellaneous: • Traumatic arthritis. • Hemarthrosis (hemophilia)	**Miscellaneous:** • Charcot's joint: *occur in DM, Tabes dorsalis* • Sarcidosis.

Rheumatology MCQ

1- A 64 years old man presents with a vasculitic skin rash , a peripheral neuropathy and gastrointestinal blood loss. He is found to have proteinuria on dipstick urinalysis. Which one of the following is the most likely diagnosis ?

A) Microscopic polyangiitis.
B) Wegener's granulomatosis.
C) Henoch-Schonlein vasculitis.
D) Polyarteritis nodosa.
E) Churg-Struss syndrome.

2- A 62 year old man complains of pain around the first metatarsophalangeal joint of the left foot. He is otherwise well and is not on any medication. Which one of the following is correct?

A) A raised uric acid level would confirm a diagnosis of gout.
B) Allopurinol should be commenced during the attack.
C) Osteoarthritis is the most likely diagnosis.
D) A normal uric acid exclude a diagnosis of gout.
E) Presence of chondrocalcinosis would confirm a diagnosis of pseudogout.

3- In septic arthritis , the commonest causative micro-organism is which of the following?

A) Streptococcus pyogenes
B) Staphylococcus aureus.
C) Hemophilus influenza.
D) Borrelia burgdorferi.
E) Neisseria gonorrheae.

4- Which of the following statements regarding drug induced lupus (DIL) <u>is not</u> true?

A) Central nervous system and renal involvement is uncommon in DIL.
B) Classical lupus skin findings are uncommon in DIL.
C) Drugs implicated in the etiology of DIL should not be used in idiopathic SLE.
D) Methyldopa is implicated in causing DIL.
E) More than 50% of patients taking procainamide for more than 12 months develop +ve ANA titres.

5- Which one of the following is a feature of aggressive disease in rheumatoid arthritis ?

A) All of the options.
B) Functional disability.
C) High rheumatoid factor titre.
D) Raised C reactive protein.
E) Rheumatoid nodules.

6- A 58 year-old man presents with blurred vision, an occipital headache, fatigue and shoulder girdle pain. On examination he has scalp tenderness, myalgia but no myopathy, and no evidence of fundoscopic or neurological abnormalitiy. Which one of the following would be the correct immediate action?

A) Commence a NSAID.
B) Commence oral prednisolone at 20 mg/d.
C) Request an ESR and temporal artery biopsy.
D) Request CT scan of the head.
E) Start the patient on 60 mg/d oral prednisolone.

7- You are investigating a patient with glomerulonephritis. A renal biopsy tissue specimen was reported as ,"there are no immune deposits on immunohistochemical analysis" This is characteristic of which one of the following renal disorders?

A) SLE.
B) Henoch Schonlein nephritis.
C) Goodpasture's syndrome.
D) Wegener's granulomatosis.
E) Buerger's disease.

8- Which of the following types of arthritis is the most common type of psoriatic arthropathy?

A) Distal interphalangeal (DIP) joint disease.
B) Arthritis mutilans.
C) Peripheral symmetrical polyarthropathy.
D) Peripheral asymmetrical oligoarthropathy.
E) Psoriatic spondylitis.

9- Which one of the following would be characteristic of the laboratory findings in a patient with antiphospholipid syndrome?

A) Low C3 and C4 concentrations.
B) Positive anticardiolipin antibodies.
C) Prolonged INR.
D) Elevated LDL.
E) Thrombocytosis.

10- Which of the following is often associated with low uric acid levels ?

A) Thiazide diuretic therapy.
B) Alcoholism.
C) Polycythemia rubra vera.
D) Eclampsia of pregnancy.
E) Psoriasis.

11- A 58 year old women who has had Sjogran's syndrome for ten years presents with enlarged cervical lymph nodes. Which one of the following is the most likely neoplasm responsible for this presentation?

A) Gastric carcinoma.
B) Lymphoma.
C) Bronchial carcinoma.
D) Chronic lymphatic leukemia.
E) Pancreatic adenocarcinoma.

12- The following diseases are associated with antinuclear and rheumatoid factor EXCEPT :

A) Infective endocarditis.
B) Autoimmune thyroiditis.
C) Sjogren's syndrome.
D) Fibrosing alveolitis.
E) Ankylosing spondylitis.

13- Presentation with acute monoartheritis suggests the possibility of EXCEPT

A) Crystal arthritis.
B) Trauma.
C) Bacterial infection.
D) Rheumatoid arthritis.
E) Hemochromatosis.

14- One of the following suggests a mechanical rather than inflammatory cause of back pain :

A) Back pain and stiffness exacerbated by resting.
B) An elevated C reactive protein.
C) +ve rheumatoid factor.
D) Gradual mode of onset in an elderly patient.
E) Radiation of pain down the back of one leg to the ankle.

15- The typical features of rheumatoid arthritis include :

A) Onset usually before the age of 30 years.
B) Male to female ratio of 3 : 1
C) Sparing of joints of the pelvic and shoulder girdle.
D) Association with HLA-DR4
E) No progression to bone & cartilage destruction.

16- Criteria for the diagnosis of rheumatoid arthritis include : <u>EXCEPT</u>

A) Morning stiffness lasting more than 1 hour.
B) Arthritis in both hip joints.
C) The presence of rheumatoid nodules.
D) Symmetrical polyarthritis.
E) Positive rheumatoid factor.

17- Typical features of active rheumatoid arthritis include :

A) Fever and weight loss.
B) Macrocytic anemia.
C) Anterior uveitis.
D) Thrombocytopenia.
E) Polycythemia.

18- The following statements about rheumatoid arthritis are true <u>EXCEPT</u> :

A) joint pain and stiffness is typically aggravated by rest.
B) the rheumatoid factor test is positive in about 70% of patients.
C) joint involvement is additive rather than flitting.
D) associated scleromalacia typically produce painful red eyes.
E) symmetrical peripheral joint involvement.

19- Diseases associated with seronegative spondylopathy include <u>EXCEPT</u> :

A) Still disease.
B) Whipple's disease.
C) Sjogran's disease.
D) ulcerative colitis.
E) Behcet's disease.

20- The features of classical polyarthritis nodosa include EXCEPT :

A) more common in males.
B) an association with circulating immune complexes containing hepatitis B virus.
C) involvement of small arteries and arterioles.
D) multiple peripheral nerve palsies.
E) severe hypertension.

21- A 70 year-old man complains of painful joints in his hips and knees , which you have diagnosed as osteoarthritis. Which of the following is the best agent to prescribe for this patient?

A) Naproxen sodium.
B) Celecoxib
C) Oral prednisone.
D) Intraarticular prednisone.
E) Paracetamol.

Match the following diseases (A-E) to the clinical setting described in questions (22-24)

A) Gonococcal arthritis. B) Gout. C) SLE. D) Osteoarthritis.
E) Rheumatoid arthritis.

22- Symmetrical bilateral ulnar deviation of both hands in a 42-year-old woman.

23- Painful ,swollen metatarsophalangeal great toe (unilateral) with redness and warmth after dinner in a 45-year-old.

24- Unilateral non tender bony enlargement of first DIP and activity related right hip pain in a 66 year old woman.

25- Overdoses of salicylates lead to all of the following <u>EXCEPT</u> :

A) Nausea and vomiting.
B) Tinnitus.
C) Marked hyperventilation.
D) Increased metabolic rate.
E) Increase in blood PH.

Rheumatology MCQ answers

1- D : Polyarteritis nodosa.

Wegner's can affect the eyes , ENT and upper respiratory tract ,lower respiratory tract and kidneys,and involve the peripheral or central nervous system .However vasculitis involving the GIT is uncommon. Microscopic polyangiitis primarily affects the kidney, and Churg Struss syndrome is associated with atopy , peripheral neuropathy,esinophilia and fleeting pulmonary granuloma. Both Henoch Schonlein vasculitis & PAN can involve GIT , kidneys and skin but PAN is more commonly associated with a peripheral neuropathy . Henoch Schonlein vasculitis can occur in adults but is much commoner in children.

2- C) Osteoarthritis is the most likely diagnosis.

Hyperuricemia is ten times more commoner than gout and uric acid levels can be normal during a flare-up of gout. Hence ,uric acid can neither confirm nor exclude a diagnosis of gout in this case where joint pain is current. Similarly chondrocalcinosis (prescence of calcium in joint) is much more common than pseudogout and the commonest joints involved are the knees, wrists and index metacarpal joints (hemochromatosis) . OA commonly affects the first MTP joints and, until the diagnosis is confirmed , treatment with allopurinol should not be commenced . In the absence of a +ve family history , a history of alcohol intake or other medication, OA is more likely than gout.

3- B) Staphylococcus aureus.

Staphylococcus aureus accounts for over 50% of infections and hemolytic streptococcus around 10% . In children under 2 years Hemophulus is common. Lower limbs tend to be affected more than upper limbs. In children the commonest site is the hips while the knee is involved more often in adult. Neisseria gonorrheae is a cause of septic arthritis in young adults and is often associated with painless skin lesions.

4- C) Drugs implicated in the etiology of DIL should not be used in idiopathic SLE.

Many drugs have been implicated in causing drug induced lupus such as hydralazine, procainamide , INH , methyldopa . Up to 90% of patients taking procainamide develop a +ve ANA and 30% of these develop DIL.

Renal, CNS & skin features of SLE are rare in DIL.

In the majority of cases the condition subsides on withdrawing the drug. There is no contraindication to using these drugs in idiopathic SLE.

5- A) All of the options.

6- E) Start the patient on 60 mg/d oral prednisolone.

Temporal arteritis , often associated with polmyalgia rheumatic, tends to occur abruptly and is commonly associated with either a temporal or occipital headache, scalp tenderness , jaw cladudications , and visual disturbance . In the prescence of latter, high dose oral prednisolone should be commenced immediately to try and prevent visual loss from ischemic optic neuropathy . A high ESR and histological evidence of arteritis are useful diagnostic tests. Although a biopsy is best performed as early as possible , the introduction of prednisolone should never be delayed.

7- D) Wegener's granulomatosis.

Wegener's granulomatosis is a primary small vessel vasculitis which involves the kidneys and causes glomerulonephritis with crescent formation. It is distinguished from other causes of glomerulonephritis by the absence of immune deposits on immunohistochemical analysis.

8- D) Peripheral asymmetrical oligoarthropathy.

Peripheral oligoarthropathy is the most common presentation of psoriatic arthropathy and accounts for 40% of all cases. It usually presents with an asymmetrical pattern of large and small joint involvement. Symmetrical polyarthropathy resembling rheumatoid arthritis may occur in 20 % of patients. Psoriatic spondylitis accounts for 20% of cases. Synovitis of DIP joints of the hands is almost pathognomic of psoriatic arthropathy but occurs in less than 10% of all cases.

9- B) Positive anticardiolipin antibodies.

Antiphospholipid syndrome is characterized by **thrombosis** of arteries and veins , recurrent abortions and **thrombocytopenia** in association with laboratory finding of antibodies directed against phospholipid .(These antibodies can be specific such as **anticardiolipin antibodies**). Also **prolonged aPTT** & although there is an increased risk of atherosclerosis and ischemic heart disease , elevated LDL is not a feature of the primary condition. Complement levels are generally normal in this disorder.

Antiphospholipid syndrome may occur by itself (1ry) or in association with an underlying connective tissue syndrome , primarily lupus (2ry).

10- D) Eclampsia of pregnancy.

11- B) Lymphoma.

12- E) Ankylosing spondylitis.

13- D) Rheumatoid arthritis.

14- E) Radiation of pain down the back of one leg to the ankle.

Suggests lumbar nerve root compression

15- D) Association with HLA-DR4

In rheumatoid arthritis no age group is exempt. The male : female ratio is 1 : 3 . There is sparing of **DIP** joints.

16- B) Arthritis in both hip joints.

See the 7 criteria for diagnosis of rheumatoid arthritis :Rheumatology book p7

17- A) Fever and weight loss.

18- D) associated scleromalacia typically produce painful red eyes. Scleromalacia is a painless wasting of the sclera unlike the rarer scleritis.

19- C) Sjogran's disease.

20- C) involvement of small arteries and arterioles.

Systemic vasculitis affecting medium sized arteries.

21- E) paracetamol , It is the first agent of choice in the treatment of early osteoarthritis.

22- E

23- B

24- D

25- E) Increase in blood PH. Overdose of salisylates causes acidosis.

Mowafy

حقوق الطبع و النشر محفوظة للمؤلف©

©All rights reserved. This book is protected by copyright. No part of it may be reproduced, stored in a retrieval system, or transmitted in any form by any means, electronic, mechanical, photocopying, recording or otherwise, without written permission from the author .